

## **DIRECTED SPRAY JET AND INSTALLATION TOOL**

### **Abstract of the Disclosure**

A piston cooling spray jet, installation tool there for, and method for the installation of the spray jet in an engine cylinder block are provided. A piston cooling nozzle has a hollow main body portion adapted to be press fit into a through bore of the engine cylinder block. A first end of the through bore is located in a piston gallery and a second end of the through bore is located in the main bearing journal. The through bore intersects with an oil circuit in the cylinder block. The main body portion of the nozzle has an orientation feature. An installation tool has a main body portion adapted to mateably engage a surface of the main bearing journal. A cap screw extends through an aperture in the main body portion, and an orientation key affixed to the main body portion partially surrounds the cap screw. The nozzle is inserted into the through bore from a first side in the piston gallery and the installation tool is inserted in the through bore from a second side in the main bearing journal such that the main body portion of the installation tool mateably engages the surface of the main bearing journal, while the cap screw and orientation key are received in the through bore. The cap screw is threaded into the interior passage of the main body portion of the nozzle and the orientation key of the installation tool mateably engages the orientation feature of the nozzle so that when the cap screw is tightened to a predetermined torque the nozzle is pulled into the through bore to a predetermined depth and at a predetermined orientation.